

# Ureteric Obstruction by Shotgun Pellet "Pellet Colic"

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## Abstract

Acute renal colic from retained missiles is an unusual and interesting delayed complication of missile injuries to the abdomen. It must be considered in patients who present with symptoms of renal colic following gunshot and shotgun wounds with retained missiles. We report a case of acute ureteral obstruction secondary to a migrating intraluminal projectile 3 days after a shotgun wound to the back.

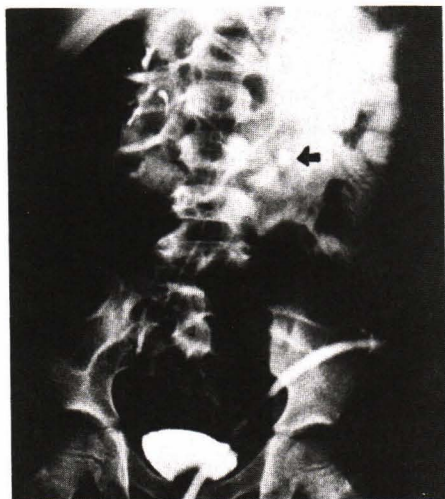
**Key word :** Ureteric Obstruction, Shotgun Pellet, Pellet Colic

## CASE REPORT

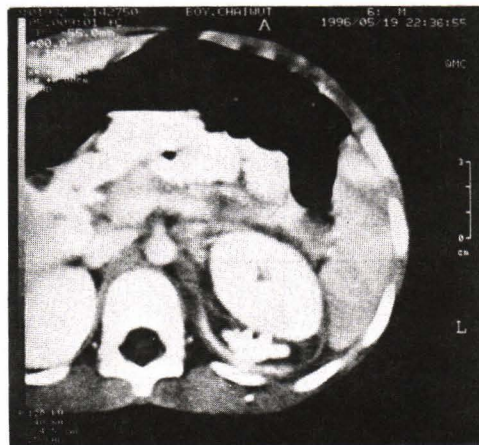
A six-year-old boy was admitted for fever and left flank colic pain of two days duration. He denied voiding difficulty, hematuria or change in bowel habits. His past medical history was significant for a shotgun injury to the left back three days prior to this admission. After his injury, he was admitted for observation in another hospital, but he was asymptomatic and no treatment was required. The physical examination was normal, except for the presence of fever (Temp = 38.5°C) and tenderness on the left side of the abdomen and flank. The shotgun wound on the back had healed. The blood chemistry, blood count and urinalysis were within normal limits.

By comparing the plain abdominal radiographic examination obtained during this admission with the one taken when the patient was first injured, we could observe that the pellet was in a more medial and inferior portion of the previous position. Considering the symptoms of acute ureteric obstruction from dislodgment and migration of the pellet into the upper ureter or infected hematoma of left retroperitoneum space, an intravenous urography and CT scan were done and revealed hydronephrosis and hydroureter proximal to the pellet and leakage of contrast media from the posterior aspect of the left kidney. These confirmed the diagnosis of ureteric obstruction from a pellet (Fig. 1, 2).

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**Fig. 1.** Intravenous urography reveals ureteric obstruction from pellet in the upper ureter.



**Fig. 2.** CT scan reveals leakage of contrast media from posterior aspect of left kidney and some hydronephrosis.

Laparotomy was done. There was a hole at the posterior aspect of the upper pole of the left kidney and one pellet at the left upper ureter about three centimeter below the ureteropelvic junction. There was hydronephrosis proximal to the pellet. Ureterotomy to remove pellet was done. The patient had an uneventful recovery and was discharged home asymptomatic.

## DISCUSSION

After foreign bodies find their way into the renal collecting system, they can migrate into the ureter and cause obstruction or renal colic. Foreign bodies may reach the kidney by several pathways. Ingested objects such as needles or toothpicks may perforate the retroperitoneal portions of the duodenum or colon and then enter the kidney. Objects introduced into the lower urinary tract may migrate up into the kidney. In cases of penetrating trauma, some missiles enter the renal collecting system directly and some erode into the collecting system from the renal parenchyma or perinephric tissues<sup>(1-7)</sup>.

Begg reported the first case in 1947. During World War I, a soldier sustained a frag-

ment wound to the left side. Three fragments were retained within the left kidney. One fragment passed through the urethra 23 years later. In 1955, McClellan reported a case of what he termed "buck-shot colic" when he described the case of a 15-year-old boy who sustained a shotgun wound to the abdomen and developed urethral obstruction from a migrating pellet 2 weeks later<sup>(1)</sup>. In the past 12 years, there have been nine cases involving pellets and two involving bullets<sup>(1-7)</sup>.

In over 73 per cent of cases of shotgun wounds, the patients developed symptoms of renal colic within 1 month of injury. The median time from injury to onset of symptoms of ureteral obstruction was 2 weeks and approximately two thirds of the cases involving retained pellets resolved with the spontaneous passage of the pellet. Shotgun pellets range in size from 2 mm to 8 mm<sup>(1)</sup>.

In 1990, Fernandes reported the removal of a BB. pellet through a percutaneous nephrostomy in an 11-year-old boy<sup>(4)</sup> and Mering described a case of retained air rifle pellet that caused complete ureteral obstruction and required ureterotomy for removal<sup>(6)</sup>.

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ภาวะท่อไตอุดตันจากกระสุนปืนนั้นพบได้ไม่บ่อย และเป็นภาวะซับซ้อนของการบาดเจ็บบริเวณช่องท้องที่น่าสนใจ ภาวะนี้ควรจะนึกถึงในผู้ป่วยที่มาด้วยอาการปวดแบบ renal colic ตามหลัง ได้รับบาดเจ็บจากกระสุนปืนบริเวณช่องท้อง ผู้รายงานขอเสนอผู้ป่วยที่มีภาวะท่อไตอุดตันเนื่องจากการเลื่อนของลูกกระสุนจากบริเวณไต มาบริเวณท่อไตด้านซ้าย 3 วันหลังจากได้รับบาดเจ็บจากการถูกยิงบริเวณด้านหลัง

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